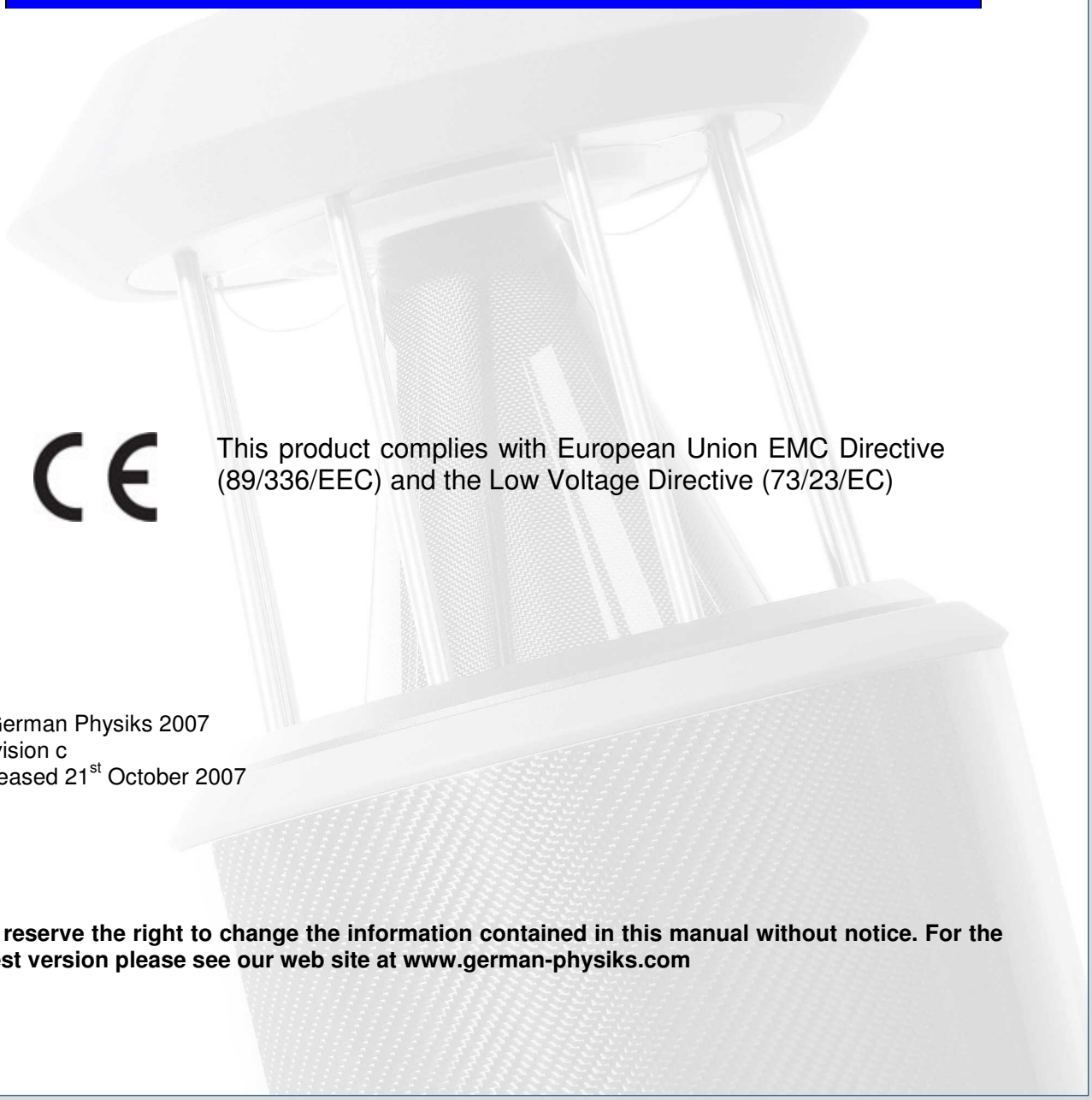
Unicorn Mk II User Manual



CE

This product complies with European Union EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EC)

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Revision c
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1. INTRODUCTION

Thank you for selecting the German Physiks Unicorn Mk II loudspeakers. The Unicorn Mk II is a full range loudspeaker using a single DDD driver operated in both its bending wave and piston modes. In the bending wave mode it radiates sound directly and in the piston mode it radiates via a horn. The Unicorn Mk II is entirely handmade and is built and tested by highly skilled technicians at our factory in Maintal in Germany.

Every step in the design and manufacture of this product has been dedicated to producing a loudspeaker that will provide a lifetime of musical enjoyment.

We strongly recommend that you read this manual before attempting to use the loudspeakers as it will enable you obtain the best performance from them.

2. UNPACKING YOUR LOUDSPEAKERS

NOTE: To allow the packing to be lifted off the loudspeakers, ensure that the room where the loudspeakers are to be unpacked has at least 135cm of clearance between the top of the carton and the ceiling.

When lifting the loudspeakers out of the packing hold them around the cabinet. Do not lift them by the DDD driver support pillars (figure 3) as this may damage the DDD driver.

The DDD drivers may be protected with clear film or cardboard covers. We recommend that these be left in place until the loudspeakers have been placed in their final location so as to guard against accidental damage during handling.

The Unicorn Mk II weighs approximately 56kg (123lbs) and should not be lifted be one person alone. Always have help.

Each Unicorn Mk II is supplied in an individual shipping carton. Both external networks are packed together in a third carton. The Unicorn Mk II cartons must be kept upright as shown in figure 1. Before opening the cartons, please inspect them for damage. If you see any damage, please contact the supplying audio dealer immediately and provide them with a full description of the damage. Do not attempt to unpack the cartons until you have spoken with the dealer and have been advised how to proceed.

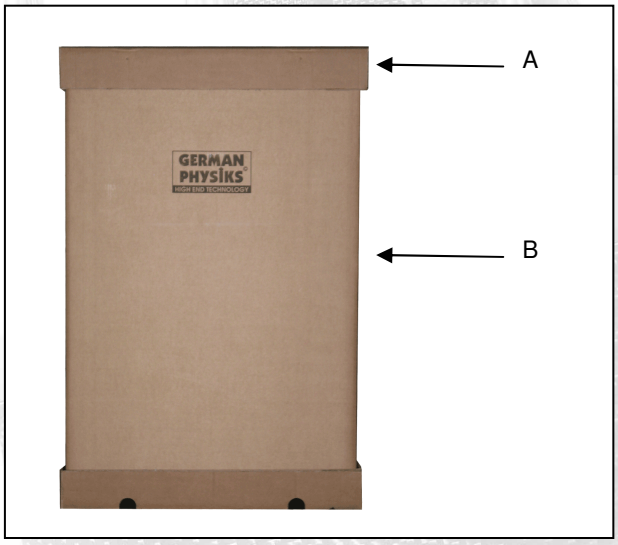

Figure 1. Unicorn Mk II Shipping Carton

To unpack the loudspeakers please follow the instructions below:

1. Remove the top of the carton – item A in figure 1.

2. Remove the foam packing piece from the top of the main body of the carton - item B in figure 1.

3. Lift off the main body of the carton – item B in figure 1. Make sure that you have sufficient clearance between the top of the carton and the ceiling above.

4. Lift the loudspeaker off the lower packing tray by holding it around the cabinet. Do not lift the loudspeaker by the DDD driver support pillars – figure 3.

5. Remove the clear film from around the loudspeaker taking care not to scratch the finish. Do **not** use a knife.

6. Remove the foam protective strip from the top and bottom of the loudspeaker cabinet.

Please confirm that the cartons contain the following items:

Item	Quantity	Description
1	2	Unicorn Mk II Loudspeakers
2	2	Unicorn Mk II Networks
3	2	Network Cables
4	1	Unicorn Mk II User Manual
5	2	Cleaning Cloths

If any items are missing or shows signs of damage, please contact the supplying dealer immediately.

Please retain all of the packing as you will need this should it be necessary in the future to ship the loudspeakers. Should you need to return the loudspeakers to the factory, you must use the original packing. The use of any other packing may result in the loudspeakers sustaining damage in transit. Such damage is not covered by the warranty. Should you require replacement packing, please contact your German Physiks dealer, the national distributor or the factory directly.

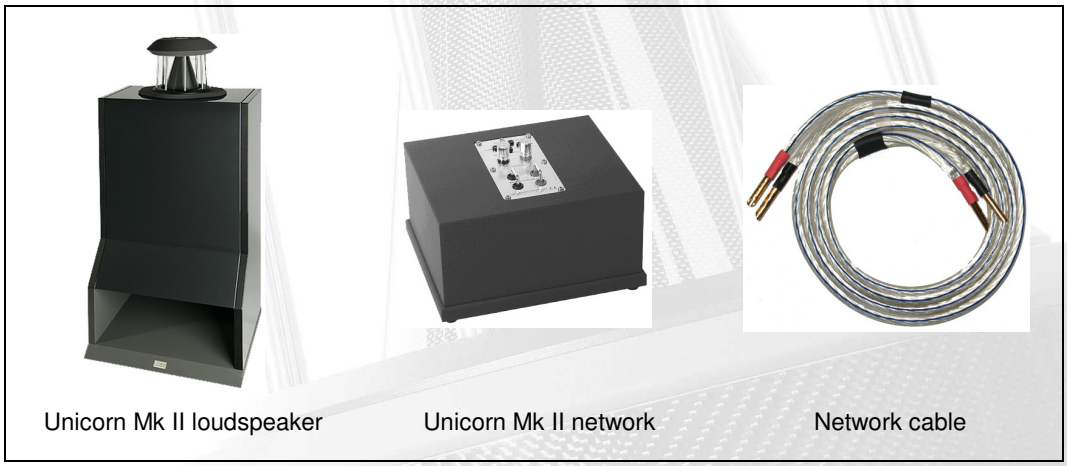

Figure 2. Unicorn Mk II Major Components

3. PRINCIPLE FEATURES OF THE UNICORN Mk II

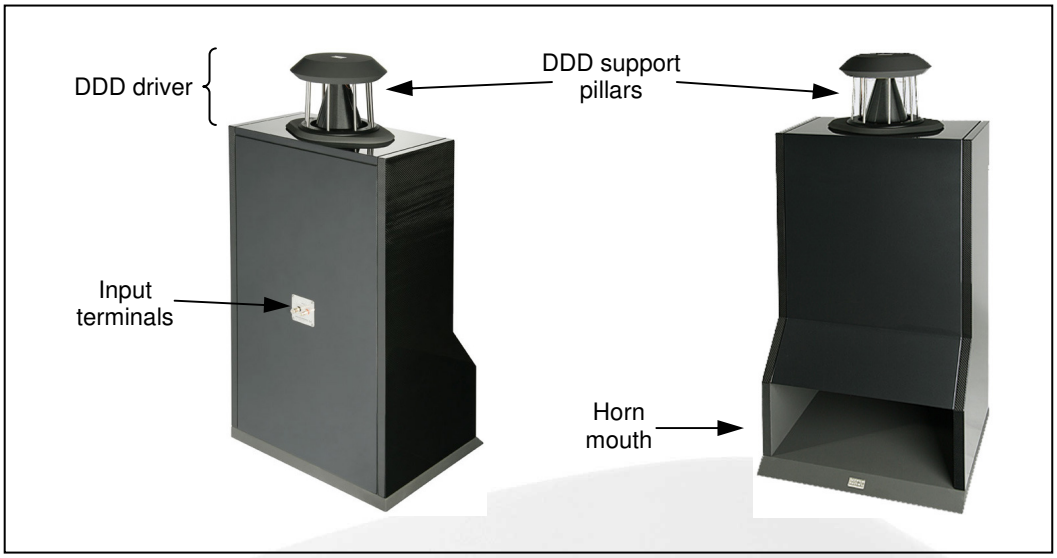

Figure 3. Principle Features of the Unicorn Mk II

4. LOUDSPEAKER PLACEMENT AND SET-UP

NOTE: DO NOT place the loudspeakers close to cathode ray type monitors or projectors, as the very powerful magnets used in the drivers may affect the picture. We recommend a minimum separation of 2m.

Adjusting the Spikes

NOTE: We strongly recommend having an assistant help to hold the loudspeakers while the spikes are being adjusted.

The base of the Unicorn Mk II is fitted with four spikes. These are double ended as shown in figure 4 and are locked in position with a nut. You will need an open ended 10mm spanner to adjust them - figure 5.

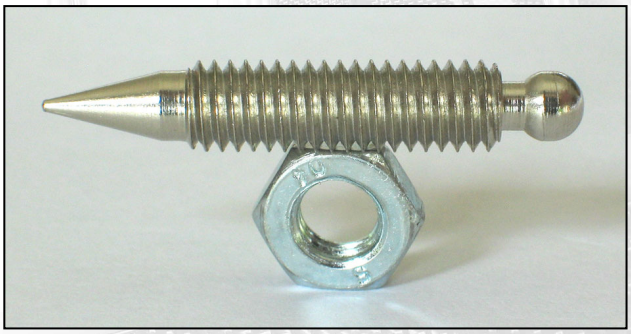

Figure 4. Double Ended Spike and Nut

The round ends of the spikes should be used when the loudspeakers are to be placed on a hard floor such as tile or wood and the pointed ends should be used when the loudspeakers are to be placed on a carpeted floor. The loudspeakers are shipped with the round end of the spikes facing out.

When placing the loudspeakers on a carpeted floor, ensure that the spikes are set to protrude sufficiently from the base to pass through the carpet and make firm contact with the underlying floor.

The easiest way to adjust the spikes is to lay the loudspeaker on its side. To protect the finish, we suggest that you use a clean soft blanket to lay the speaker on. Set the two spikes at the back and the left hand front spike to protrude approximately the same amount - within 1 or 2mm – and then tighten the locking nut. Set the right hand front spike to protrude the same amount, but do not tighten the locking nut.

Stand the loudspeaker up and place it in its initial position. Please refer to figure 6 for guidance on positioning.

If the Unicorn Mk II is placed on a carpet, push downwards on the top of the cabinet and ensure that the spikes are in contact with the underlying floor. Do not push on the top of the DDD driver.

To check that the loudspeaker is sitting squarely on the spikes:

1. If the loudspeaker can be rocked in the 10 o'clock to 4 o'clock direction, lean the loudspeaker to the left and screw out the right hand front spike by the amount of movement you saw at the base of the cabinet. It is best to have an assistant to help you hold the loudspeaker. Stand the loudspeaker back up and repeat the process until the loudspeaker is sitting squarely on its spikes. Lean the loudspeaker to the left again and tighten the nut on the right front spike (figure 5), taking care not to change the spike's setting.

2. If the loudspeaker can be rocked in the 2 o'clock to 8 o'clock direction, lean the loudspeaker to the left and screw in the right hand front spike by the amount of movement you saw at the base of the cabinet. It is best to have an assistant to help you hold the loudspeaker. Stand the loudspeaker back up and repeat the process until the loudspeaker is sitting squarely on its spikes. Lean the loudspeaker to the left again and tighten the nut on the right front spike (figure 5), taking care not to change the spike's setting.

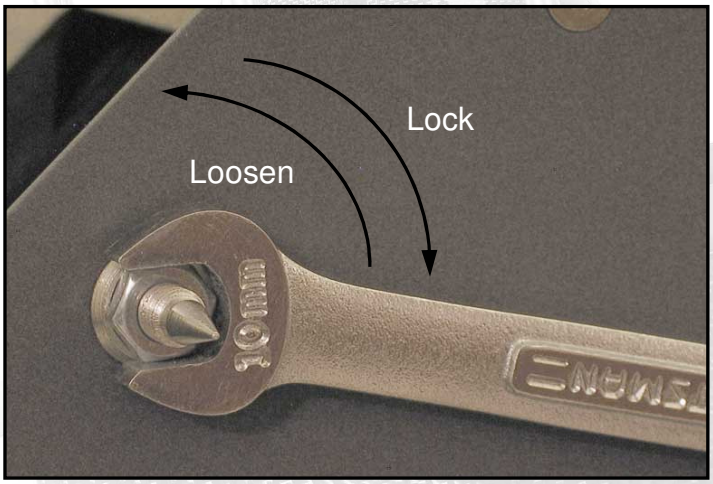

Figure 5. Adjusting a Spike Nut

Listening Room Layout

The following points will help you optimise your listening room layout.

1. The left and right sides of the room should be symmetrical. If the room is asymmetrical, this will degrade the quality of the stereo image. This is because most of the sound energy that you hear is reflected before it reaches your ears.

2. Place the loudspeakers symmetrically in the room, i.e. the same distance from the centre line of the room and the same distance from the front wall.

3. Avoid placing the speakers similar distances from the side and front walls, as this may lead to an uneven bass response

4. Avoid having any hard surfaces between your listening position and the loudspeakers. This will generate additional reflections that may degrade the stereo image. For this reason, where ever possible equipment should be located at the side of the room. If you have a hard floor (tile or wood), it may be advantageous to place a carpet on the floor covering the area between the loudspeakers and the listening position, as this will reduce unwanted early reflections.

5. Avoid having the listening position closer than 1.2m from the rear wall as early reflections from the wall will degrade the stereo image.

Loudspeaker Placement

Distance from front wall

We recommend that you start with the Unicorn Mk II positioned 1.0m from the front wall and set facing directly down the room as shown in figure 6. As you move the speaker closer to the wall the level of the bass response will increase. The converse will be true as you move the speaker away from the front wall. The Unicorn Mk II should not be placed closer than 20cm from the front wall and no further away than 4 metres. If the loudspeaker is placed too close to the wall, the amount of bass will be high, but it will not be well controlled and the stereo imaging will be degraded due to an increase in early reflections. Aim to find a position that provides an even bass response so that all the bass notes in the music are reproduced at an equal level, combined with well focussed stereo images. Be sure that the recording you use to check this has an even bass response.

In some rooms it may be beneficial to toe the loudspeaker in towards the listening position. This will have the effect of reducing the amount of bass whilst improving bass control.

Distance from side wall

We recommend that the distance between the centres of the loudspeakers be 2/3 of the distance of the loudspeakers from the listening position. Moving the speakers further apart will degrade the stereo image.

We do not recommend placing the loudspeakers closer than 20 cm from the side walls, as the early reflections will degrade the stereo image.

Positioning the loudspeakers too close to the side walls will also lead to an uneven bass response. Aim to find the position that provides the best defined and most realistic stereo image combined with an even bass when you are seated at the listening position.

Figure 6 gives a general guide to speaker positioning and the location of the listening position. Note how the recommended listening position varies with the separation between the loudspeakers.

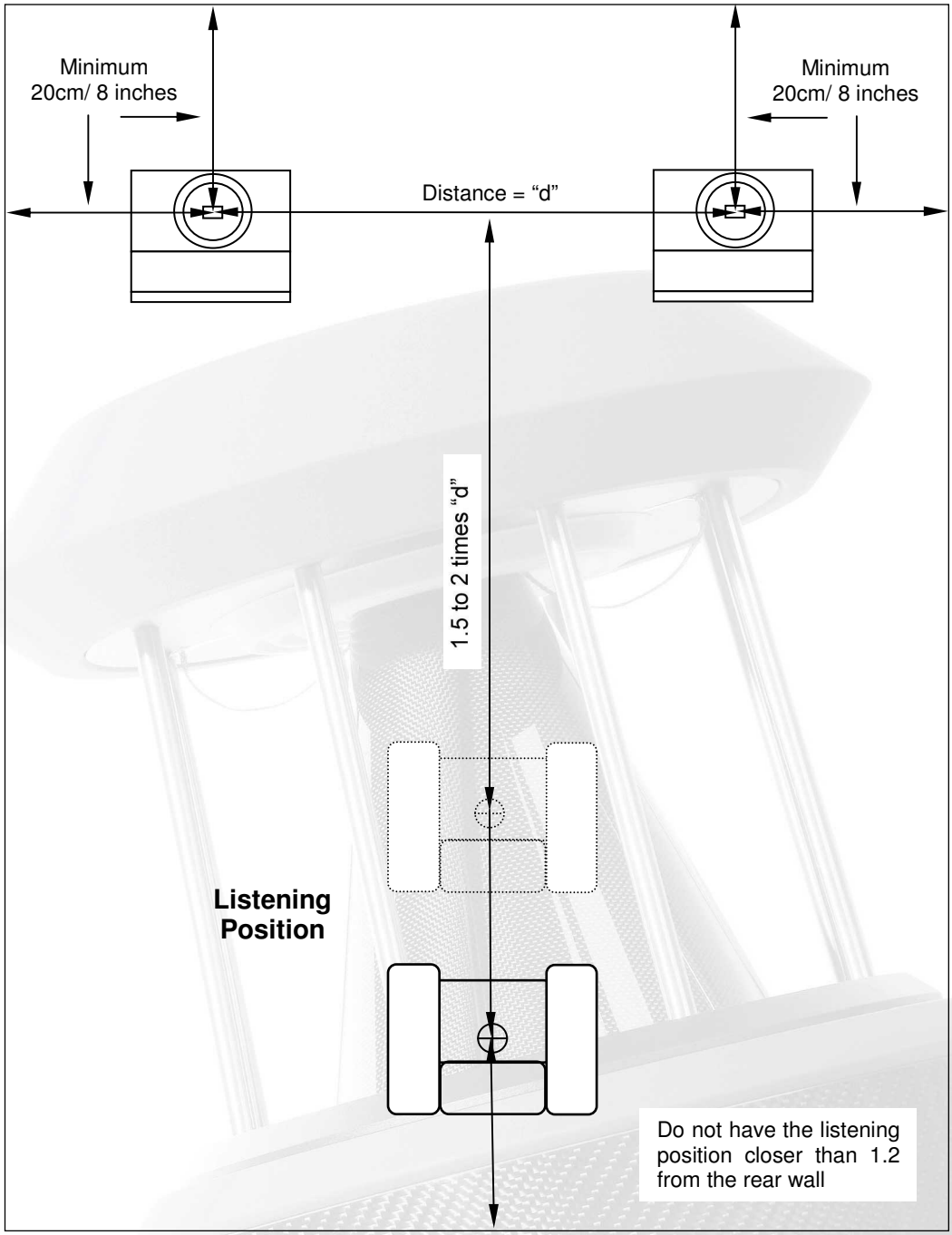

Figure 6. Listening Room Arrangement

5. CONNECTING YOUR LOUDSPEAKERS

NOTE: The Unicorn Mk II must be used with the external network supplied. Do not connect it directly to the power amplifier.

An amplifier capable of delivering at least 60W rms into 4 ohms per channel should be used for each loudspeaker.

The external network supplied with the Unicorn Mk II has both high and low frequency level controls. The high frequency control allows the user to compensate for variations in the listening room high frequency absorption characteristic. The low frequency control allows the used to adjust for the best bass performance in their room. These controls and the input terminals are located on the external network's top panel – figure 7.

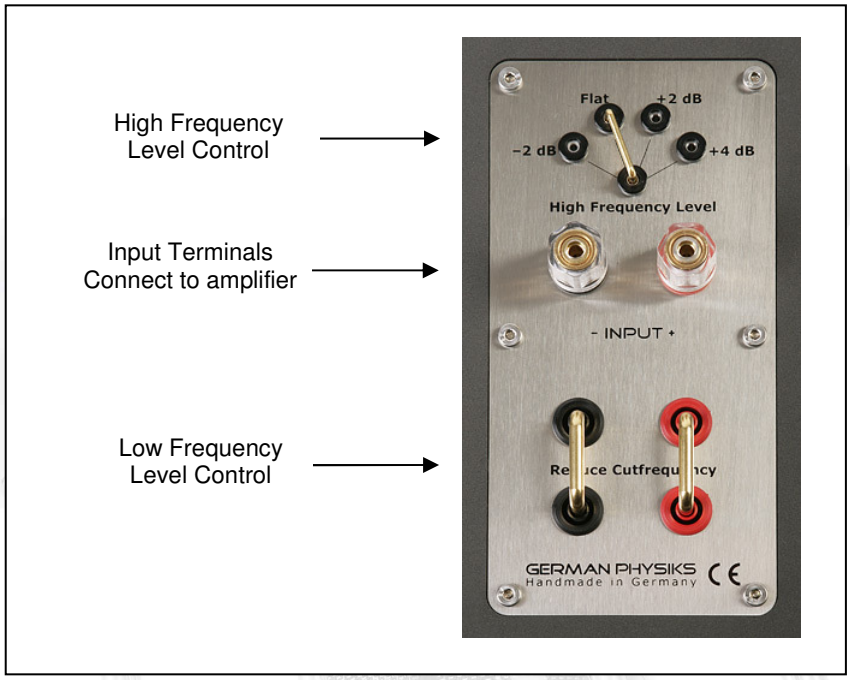

Figure 7. Input Terminals and Level Adjustments for the Unicorn Mk II

High Frequency Level Control
4 settings are provided: -2dB, Flat, +2dB and +4dB and the centre frequency is 8,000Hz. To adjust the control, pull the jumper out and then push it back into the appropriate pair of sockets. Initially this control should be set to the flat position. Make any final adjustment after the break in period.

Low Frequency Level Control
This is a low frequency shelf control and takes effect at 60Hz. Initially this control should be set to the flat position. Make any final adjustment after the break in period. To adjust the control set the jumpers as shown below:

Jumper Setting	Titanium DDD Driver	Carbon DDD Driver
No jumpers fitted	Flat	Flat
Black jumper only	+1.0dB	+1.0dB
Red jumper only	+2.0dB	+2.0dB
Black and red jumpers	+3.0dB	+3.5dB

Input Terminal Connections

NOTE: The loudspeaker input terminals should be tightened as firmly as possible by hand. Do not use pliers or any other tools as this may damage the terminals.

Use the cable supplied to connect the input sockets on the back of the loudspeaker (figure 3) to the output sockets on the side of the external network. Ensure that the two red sockets are connected together and that the two black sockets are connected together. Connect the amplifier to the input terminals on the top of the external network. Do not connect the amplifier directly to the Unicorn Mk II as this may result in damage to the DDD driver which will not be covered under the warranty.

We recommend that you use loudspeaker cables terminated with high quality spade lugs, as these provide the best electrical connection. The lugs should be either soldered or crimped to the cable – the latter is preferred. We do not recommend the use of bare wire to connect to the loudspeaker terminals. This produces an inferior connection that will degrade as the bare conductors become tarnished.

NOTE: Do not switch the amplifier on until the DDD covers have been removed as shown in section 6.

6. REMOVING THE DDD SHIPPING COVERS

If your loudspeakers are fitted with titanium DDD drivers these will be covered with either a layer of clear film or cardboard to protect them whilst in transit. This should now be removed. The film should be peeled off by hand. Do **not** use a knife.

To remove the cardboard protector, slit the adhesive tape securing it by sliding a **short** bladed knife between the two layers of cardboard whilst holding the knife as shown in figure 8. Do not cut in the way shown in figure 9, as there is a danger that you will cut the DDD driver diaphragm.

Figure 8. The Correct Way to Remove the DDD Driver Cover

Figure 9. The Wrong Way to Remove the DDD Driver Cover

7. LOUDSPEAKER BREAK IN

Like all audiophile equipment, German Physiks loudspeakers require a break in period from new before they reach their optimum level of performance. The music used for the break in should be dynamic in order to properly exercise all the components of the loudspeaker.

For the first 10 hours play the loudspeaker at low level only. This is a level where you would easily be able to carry out a conversation without needing to raise your voice.

After this, the speaker may be played at normal listening levels. The break in process will be complete after 200 to 300 hours.

8. CARE OF YOUR LOUDSPEAKERS

NOTE: **NEVER attempt to open the cabinets. There are no user serviceable parts inside the loudspeakers.**

NEVER touch the diaphragm on the DDD driver, or allow any object to come into contact with the diaphragm.

NEVER attempt to clean the dust off the diaphragm. Dust has no affect on its performance and may be safely ignored.

NEVER attempt to clean the speakers with any abrasive materials or any cleaners containing ammonia, alcohol or other solvents, as these may damage the finish.

The only maintenance the speakers will require is periodic dusting to remove dust and any finger prints from the cabinets. Please use the cleaning cloths supplied with the loudspeakers. These cloths should be used dry. Do not use any form of liquid with them. Additional cloths may be obtained via local your German Physiks dealer, national distributor or direct from German Physiks.

9. WARRANTY

Your German Physiks loudspeakers are warranted to be free from defects if used under normal conditions for a period of 5 years from the date of purchase, provided that the customer registers their purchase by completing and returning the registration form at the end of this manual within 7 days of purchase. They must also return a copy of the receipt issued at the time of purchase. If this is not done the warranty period will be 5 years from the date of shipment from the factory. This warranty is transferable to subsequent owners, who must register their purchase with us.

Modifications or repairs performed by the factory, or by an authorised repair agent, shall be guaranteed for the remaining period of the warranty, or for 1 year, which ever is greater.

Any unauthorised modifications or repairs will invalidate the warranty. The warranty will also be invalidated if German Physiks determines that the unit has been subject to misuse including, but not limited to, burnt out voice coils and dents or scratches on driver diaphragms or cabinets.

There is no other express warranty on German Physiks products. This warranty shall not extend beyond the stated warranty period. No responsibility is assumed for incidental or consequential damage.

10. SERVICE AND SUPPORT

In the first instance please contact your local German Physiks dealer or distributor. They will diagnose the fault and liaise with German Physiks to decide the best way to affect a repair. If they unable to assist you, please contact German Physiks by phone on + 49 61 09 50 29 823, by fax on + 49 61 09 50 29 826, or by email at service@german-physiks.com. You can also contact us via our web site at www.german-physiks.com. Please take into account time differences between Germany and where

you are calling from should you need to phone us. Email is our preferred method of initial contact. Please supply the model name and serial numbers of your loudspeakers and as much detail of your problem as possible. The serial number is printed on a label attached to the underside of the loudspeaker's base plate.

In most cases, the repair will be dealt with by sending spare parts from the factory. If it becomes necessary to return your loudspeakers or any part of them to the factory, you will be given a Return Authorization (RA) number. This number must be clearly marked on the outside of the packing. Returns made without a RA number will not be accepted. Any returned items must be shipped in the original packing. German Physiks will not be responsible for any damage that occurs as a result of the use of non-standard packing. Returns received in non-standard packing will be replaced with new packing at the owner's expense. If you need new packing, please contact your German Physiks dealer or the factory.

For items returned to the factory under warranty during the first year, German Physiks will pay for the shipping charges both ways. A shipping company approved by German Physiks must be used and the items will be returned to the customer using the same carrier, or an equivalent service.

For loudspeakers returned to the factory under warranty after the first year, the customer is responsible for paying all shipping and related charges back to the factory. A shipping company approved by German Physiks must be used. Providing this condition is met, German Physiks will pay the cost of shipping the loudspeakers back to the customer.

German Physiks will not pay any shipping costs if:

a. Loudspeakers or parts are returned without a RA number
b. No fault is found
c. If the fault is judged to be due to misuse such as, but not limited to, burnt out voice coils and dents or scratches on driver diaphragms or cabinets.

Customers are responsible for all freight, duties and related shipping charges for loudspeakers returned for non-warranty repairs.

11. HOW TO CONTACT US

If you wish to get in touch with us please use the contact information shown below. Please note that our office hours are from 9.30 a.m. to 5.00 p.m. Monday to Thursday, excluding public holidays and that we cannot respond to enquiries outside of these hours. Where ever possible you contact us by email. This will allow us to give your enquiry more consideration and so provide a more detailed reply.

Address	DDD-Manufactur GmbH Gutenbergstraße 4 D-63477 Maintal GERMANY
Telephone	+ 49 61 09 50 29 823
Fax	+ 49 61 09 50 29 826
Email	service@german-physiks.com
Web	www.german-physiks.com

12. UNICORN MK II SPECIFICATIONS

Version	With Titanium DDD Driver	With Carbon DDD Driver
Impedance	4 ohms	4 ohms
Frequency Response	55 - 21,500Hz	40 - 24,000Hz
Power Handling **Nominal** **Short term**	 80W 100W	 100W 140W
Amplification required	Minimum 60W/ 4 ohms	
High frequency adjustment	-2dB, flat, +2dB and 4dB centred at 8,000Hz	
Low frequency adjustment	Flat, +1.0dB, +2.0db and +3.0dB starting from 60Hz	Flat, +1.0dB, +2.0db and +3.5dB starting from 60Hz
Sensitivity	87.7dB for 1W at 1m	88.0dB for 1W at 1m
Operating principle	1 way full range loudspeaker with 360° surround radiation using the DDD Bending Wave Converter	
Input connectors	1 set of binding posts	
Driver	1 x Titanium DDD driver	1 x Carbon DDD driver
Dimensions **Speaker**	550mm W x 1,241mm H x 460mm D 21.7" W x 48.9" H x 18.1" D	
Crossover	270mm W x 173mm H x 230mm D 10.6" W x 6.8" H x 9.1" D	
Weight **Speaker**	Approx 56.0kg Approx 123.2lbs	
Crossover	4.4kg 9.7lbs	
Warranty	5 years	
As part of our process of continually improving our products, we reserve the right to change specifications without notice		

13. WARRANTY REGISTRATION

In order to register your purchase and obtain the full 5 year warranty, Please complete the form below within 7 days of purchase and return it by post together with a copy of the receipt of purchase to:

DDD-Manufactur GmbH
Gutenbergstraße 4
D-63477 Maintal
GERMANY

Name	
Address	
Country	
Zip/Post Code	
Speaker Model	**Unicorn Mk II**
DDD Type Delete as necessary	**Titanium / Carbon.**
Serial Number See label under speaker	
Finish	
Date of Purchase	
Where Purchased	
Address	
Country	
Zip/Post Code	